HOW PEOPLE LEARN *

by

Ellis Clough

I - Introductory Remarks

We are honored by the Ministry's invitation to join you in this work of developing this program for reaching your rural people. We consider it a special privilege to be associated with you here in work of such importance to Iran. We come as representatives of the people of the United States and other countries. We hope you will regard us as fellow-workers and as friends. We have gained and learned much from Persia and from this whole region from your history, your culture, your systems, your agriculture. Through technical cooperation and in other ways we can partly pay it back to you - out of our own experience and culture.

As people, we are alike or similar in more ways than we are different. Here this week we are joined together in the study of farmers, their families, their problems and to develop a program that will touch them all. But we Americans have no magic to bring to you. Many of us know you Iranians and your country only in a superficial way. I do not even pronounce your names correctly. However, I do know how to count my rials and how to ask for your excellent beer! No, we do not bring solutions. But out of the characteristics and experience of farm people everywhere perhaps together we can derive principles and formulae or procedures which will lead to solutions. It is in this spirit that I wish to discuss with you the ways people learn in order to change -- and thus, to better themselves.

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II. "Extension" concept is applicable everywhere

"Extension" is a concept, a method of influencing farm people which has proved effective wherever it has been skilfully applied. Extension is not a way of doing things for people; it is a way of doing things with people, of doing favorable things to people. It has been said here previously that "extension is helping people to help themselves". Let us add two words to that definition, like this - "Extension is helping people to learn --- to help themselves". It is a program of voluntary education the aim of which is "continuous individual and social growth" for young and old, for men and women and youth, for individuals and families, for groups, and for a whole people. It is a method which is both pyschological and sociological in its effects. In its full development, it touches all rural people by using the natural, normal, human approach. You have said that Iran wants to develop a program like that.

III. Extension is teaching

Extension is a way of teaching individuals and groups about their activities and problems in such a way that they make changes -- for the better. Our students are the farmers, young and old, their wives and children, the "gray beards", the mayors, the landlords. Our classrooms are the open fields, the compounds and homes of farmers and landlords; also as classrooms there are the tea-houses, the bazaars, the regular school houses, whole villages, the experimental farm and the offices of ostan officials. Our curriculum or the things to be taught are the new facts and improved farm and home practices developed through research, the benefits to be gained through other Ministry programs such as animal disease control; also to be taught are results of village demonstrations with crops and livestock and the practical solutions other farmers have found for their own problems. Our textbooks are the plants and animals themselves, even progressive neighbor farmers, the home gardens, the village demonstration plots; also as textbooks we use the reports of research projects, information prepared by the bongahs, community fairs and exhibits; also posters, films, real books - anything that provides ideas and information helpful to rural people.

Who are the teachers? They are the "local extension agents", they may also be the mayor, the "graybeards", the regular school teachers, leading farmers and also the bongah technicians who cooperate with all these others at the village level. How do they teach? Because they do not have the formal authority of regular teachers nor special schedules and classrooms, our "extension teachers" must use

many informal methods and they must possess particular attitudes and abilities if they are to be effective. These matters are to be discussed fully in lectures to follow. The first requirement of our "Teachers" is that they understand the nature and process of learning. This is the real purpose of my discussion here.

IV. What is Learning?

The psychologists define learning as the process through which an individual through his own activity becomes changed in his behavior, his way of thinking or doing or his way of feeling. The psychologists say also that the changes which take place in the learner are of three broad types or kinds:

1) Changes in the things he knows - (Knowledge)

2) Changes in the way he does things - for example, using a better variety of wheat. (Skills or methods)

3) Changes in his ways of feeling (Attitudes)

Stated simply - learning is that kind of activity by a person which causes him to be different in some way afterward. And because of his action, he:

1) Adds to or changes his previous information or knowledge;

2) Does some task or operation differently than before; or

3) Changes his attitudes or point-of-view about something.

As an example, let us say that I want to learn to write my name in your Persian script. I have a good teacher - let us say - Mr. Khadevi. The process I go through in becoming able to write my name in your script is learning. I am a different person by that much; I have changed. I have learned a new skill. Also, I have added to my knowledge about Iran. Also, in a small way, I have changed my way of thinking, my attitude, about your language. It still would seem strange and difficult but not so much as formerly. I have learned.

Here's another illustration: Peasant farmer Ahmad wishes to teach his son how to use the sickle so he can help cut the wheat. As a small boy, he has seen his father cutting the grain many, many times, but when first given the sickle he cannot do the task well. The process the boy

goes through in becoming able to cut grain is learning. He is a different boy now; he has added to his knowledge about wheat; and he feels different -- his attitude about himself, about his father, and about the farm work has changed. The boy has learned. These are quite simple illustrations.

Let us take a more complex illustration of learning. How does a farmer learn new facts, improved farming practices? How do his long-established attitudes or ways of feeling become changed? Let us use the father Ahmad as an example. At wheat threshing time, Ahmad hears that his cousin in another village has threshed out the largest yield of wheat he has ever grown. It was a much greater yield than Ahmad himself received that season. A few days later he visited his cousin to see this wheat. It looked like very good wheat. It was a different variety than previously grown in any of the villages in that region. The landlord had given his cousin the seed; he had also given seed of this new variety to several other farmers in his cousin's village. Nearly all of them had harvested more wheat than for many years. Some farmers in his cousin's village had planted the same wheat as formerly and had harvested about the same yields as usual. Ahmad learned that 1) there can be a big difference in wheat varieties (new knowledge); 2) that sometimes it pays to try new ideas (change in attitude); 3) he also felt differently toward his cousin, toward the farmers of his cousin's village and toward the landlord (change in attitude). The next season Ahmad asked his own landlord for some seed of the new wheat - enough to plant part of his field. He was not yet convinced that the new wheat would do as well on his own land as the old variety and he was afraid to use it for his whole crop. All through the growing season, Ahmad watched the new and old wheat very carefully. The new variety appeared to be superior in several ways. Some of his friends noticed these differences also. At harvest time, Ahmad harvested the largest yield he had ever had on that land and it was significantly more than the harvest from the land seeded to the old variety. All of his neighbors were much interested in the new wheat and in Ahmad's success. He told them of what he had seen the previous year in his cousin's village. Ahmad and his neighbors asked the landlord for more of the new seed. All of Ahmad's crop was kept for seed and the landlord obtained more from the other village and from the ostan seed farm. The following year by working together, enough of the new variety was grown in Ahmad's village to provide enough seed for all.

One time a stranger came to the village with the landlord. They talked with the mayor and some of the gray beards. The stranger was an "extension agent". Ahmad had heard there was some stranger like this visiting villages and talking with mayors, graybeards and some of the farmers. Now Ahmad had seen him and found out that this extension agent had been the one who had brought the new wheat to his cousin's village. He heard the agent talking about preparing the land better for seeding and about sowing the wheat more evenly. He and some of his neighbors decided to try these new practices. In most cases, the new practices had very favorable results.

Ahamad learned many things during these experiences. He learned that the new wheat was good for his field and his village as well as for his cousins field and village (added knowledge); he felt even more grateful to his cousin and had a better feeling about the landlord. He talked with his neighbors and his family about it (change in attitude); he had learned that sewing more uniformly and more through preparation of the field gave better yeilds (change skill or method); he decided he would try to learn other new methods(change in attitude); perhaps there were better varieties for his other crops too? perhaps there was a better way to use the water? Were there some new things that he could learn about his animals? He had learned additional ways to work with his neighbors: he liked that. He would be less suspicious of the strange "extension agent" when he came to the village again (changes in attitude).

To repeat our definition - Learning is the process by which an individual through his own activity becomes changed in his behavior. Ahmad, through his own deliberate actions, became changed. He had learned. His neighbors had learned also. Let us analyse it further.

A. Learning is an active process. Our definition reads "...through his own activity...." A more pracrical way to say this is - "We learn to do by doing the thing to be learned. We also speak of it as participation by the learner - he must be actively participating in some manner or he is not really learning. Let us go back to our examples. I could not possibly learn to write my name in your perisan script unless I actually did the thing I was trying to learn. Mr. Khadevi, my teacher would make for me a correct image of each letter and tell me how to make each one. He would show or demonstrate how to make them but I would not learn very much until I actually began to make each character myself. And I would not completely learn until I had made them over and over. I know this is true form my experience in writing your numbers one to ten. I still have trouble making your number 4. I have not completely learned it yet. Similarly, in learning to use the sickle, Ahmad's son would have to use the sickle in cutting wheat or something else. His father would tell him and show him but the boy would not learn except through his own activity. This is one of the reasons why the demonstration is so frequently used in extension teaching -- it stimulates each farmer to perform the technique being taught.

Ahmad also was active in several ways in learning that the farmer in his cousin's village had found a better wheat and that this variety was also better for his own land and for others in his village. In the beginning, he heard his cousin say that he had harvested his biggest crop ever. Then he walked to his cousin's village. There he looked at the new wheat; he felt it in his hands; he smelled it; he talked with his cousin and other farmers; he looked at the fields where it had grown; he looked at at the old wheat variety and talked with other farmers. Walking back to his own village, he did much thinking: he thought about how much

more wheat he would get from his land if he planted the new variety; how would he use the extra money and so on. But he also felt afraid. What would his neighbors say about him if he sowed the new wheat? What if it did not produce well on his land? Perhaps his landlord would not like the idea. But it was beautiful wheat and felt so good in his hands; he could not stop thinking about it. He decided he would ask his landlord to obtain enough seed for part of his field the next year. He would also talk to his wife about the problem. After some time he talked with his friend Salman, one of the grey beard; still later he talked with the landlord. The landlord agreed to get him some of the seed. When the new seed arrived, he looked at it and felt it and smelled it; yes, it appeared to be the same as in the other village. He had been afraid that it might not be. At planting time, he prepared his field for sowing more carefully than before. He decided on which side of his field to plant the new wheat. He sowed both the new and old seed as carefully as he could. He irrigated his field carefully also. All through the growing season he studied the two wheats as they grew. He observed distinct differences in favor of the new. Salman and other neighbors came and he told them all about it. They became almost as interested as Ahmad himself. It was a good feeling. When the wheat was ripening it was good to feel how heavy were the heads of the new wheat. Ahmad harvested the two plots carefully and noticed that the new wheat seemed heavier. He threshed out the two crops very carefully. He felt that the new wheat was beautiful and it felt so heavy and good in a man's hand. Salman helped measure the grain. The new wheat had out-yielded his old by a big margin. All of his firends and many other farmers came to see it. They enjoyed feeling it and smelling it just like Ahmad himself. It was a good feeling to have so many come to see. And most of them decided to plant this new wheat the next year. Ahmad felt very proud.

To summarize - We can see that Ahmad was participating very actively during this learning. He was participating in several ways - physically, mentally or intellectually and also emotionally. His learning to produce more wheat by using a better variety was not complete until he had actually grown the new variety and saw and felt that it was better.

B. "Interests" and "needs" in the learning process - Learning stems from an interest in something or a felt need for something. The learner does things - becomes active - in order to satisfy his interest or need. I want to be able to write my name in script. It will give me personal satisfaction. I know it will please and amuse my Iranian friends and I can show it to my family back home - "See! This is Persian script". It is the end or the result which I want. My interest is not in the process through which I learn. Ahmad's son feels a need to learn to use the sickle skillfully, not because he enjoys harvesting the grain, but to be like other boys of his age. He also feels a duty, the need to help his father with the work. Ahmad's interest in first seeing and then planting the new wheat is because it will produce a larger crop and add to his small income.

He needs every additional rial he can earn for his family and for his debts. It also gives him satisfaction to produce good wheat and to know that his neighbors think highly of him.

Extension agents always begin their work with farmers by finding and using these interests and felt needs. Through gaining satisfaction in these, farmers develop confidence in themselves and in the extension agent and will seek his advice in other problems. Farm families want and need many things but many times they do not know how to proceed to get them. The extension teacher works with individuals and local groups and helps them to find ways to meet the situation. He will stimulate or arouse their interest in some other activities which will lead to eventual solution of the problem. Good extension workers help families work out their own problems rather than give them ready-made answers. It is teaching through persuasion instead of dictation.

All of this means that the agent must become very well acquainted with farmers and their families. He must know their interests and needs and problems and limitations; he must know and use the greybeards and others to whom the farmer looks for leadership. The agent must know the things which families enjoy and the things which they fear. He cannot help them until he has gained their respect and confidence. It is for these reasons that true extension agents have no connection with any control or regulatory projects. Farm people do not wish to talk to or to learn from those they suspect.

C. New Learning Is Built Upon Previous Experience

Previous learning or experience serves to stimulate new learning. This is especially true if the previous experience was satisfying and vivid. We have seen how Ahmad was willing to learn other new farm practices because his experience with the new wheat was so satisfying. Ahmad's son learned to use the sickle quickly because he had watched his father harvesting wheat so many times. He tried to kneel on the ground and to swing the sickle just like his father did. It was awkward at first and he became very tired. His very tiredness (vividness) helped teach him how to grasp the straws with his left hand and bend his body and swing his right arm. He felt good when he learned to cut without becoming tired.

The psychologists call this building of new learning upon previous experience -- Association. It is the fundamental principle of all learning. The extension agent uses it in almost everything he does. He begins to work with the farmer as he is. He learns how the farmer thinks, what are his attitudes, his customs, his fears or inhibitions, his habits, his skills. Each of us is a product of many previous learnings, experiences, attitudes, fears, customs, and laws imposed by others. We are "conditioned" by all the things around us. - "Creatures of our environment." But we do

have interests and desires. There is some point within our nature, our way of thinking and doing that is "ready to change". So the extension agent is a practical psychologist; he knows his village people so thoroughly that he can discover in each farmer these points of "readiness". He must work carefully. The peasant farmer's mind is not richly stocked with information and progressive concepts. He does not read or write but he will recognize images, symbols, ideas that are familiar - related to what he already knows and has experienced. So the agent uses many methods and devices that will stir the farmer to think in terms of the familiar. Here again let me stress that the extension agent can have no relation to regulatory programs. If he has, the farmer will immediately associate the agent's efforts to teach with other things which the farmer does not like.

D. Learning is an Individual Process

From all we have said before, it is obvious that learning new knowledge, skills and attitudes is an individual matter. Each person has to learn for himself. We have said that a person learns through activities -- his own activities. Remember Ahmad and the new wheat? We have said that a person learns in order to satisfy an interest or need. Well, these interests and needs are personal and private for each man. Think of Ahmad again. Also we have said that one learns by associating the new information or skill or attitude with something already known or already in his experience. Clearly knowledge, skills and attitudes already possessed are highly personal. This principle also has great importance in extension teaching.

Surely, persons may learn in groups but they learn and change as individuals -- as single persons. The farmers of a village do have similar interests and wants and problems; they have the same crops and use the same animals and the same tools; probably, they have the same landlord; they have had similar backgrounds and experience; some of their information and many of their farming methods and ways of feeling are common to all. But this does not mean that each is ready to learn at the same time or in exactly the same way. However, by knowing his people as individuals and by skillful methods, the extension agent can teach them in groups. He will teach from a common need in order to help them learn to change as individuals. If individuals do not change, there is no group change. This again illustrates the great importance of the agent knowing all the farmers and families of the village as intimately as possible.

V. Some Human Tendencies Related to Learning.

A skillful extension agent knows and uses some of the natural, human tendencies found in farm people. Man has a tendency:

1. To seek and enjoy the presence of others.

2. To seek and enjoy the approval of others and avoid their disapproval.

3. To be aggressive or self-assertive. This explains how some individuals rise from the group to become leaders. These less aggressive will follow good leadership.

4. To be ruled by his emotion--such as liking and disliking (as of persons), joy, sorrow, fear, pride, envy, etc.

5. To be visual-minded--that is, he is especially receptive to things seen as compared with things heard.

Village farmers are very likely to respond to teaching methods which are in accord with the above tendencies. They will tend to reject or resent methods which conflict with these tendencies.

VI. Influence of Age on Learning

It is commonly believed that the ability of people to learn and their rate of learning decreases rapidly after age 25, for example. This is not true. It is of special significance to the extension agent to know this because he works with older folks as well as the young ones. A number of careful scientific studies have been made of this question involving hundreds, sometimes thousands, of individuals of all ages. The results of these studies are in close agreement.* These studies show that:

1. After age 40 there is a slight decrease in learning capacity--from $\frac{1}{2}$ to 1 percent per year.

2. After age 35 there is a decrease in rate or speed of learning about 1 percent per year.

The reasons given for the decrease in rate of learning are:

1. Less acute vision.
2. Less acute hearing.
3. Slower reaction time-older persons connect ideas a little less rapidly than children.
4. Greater reluctance to learn and increased fear of failure.

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* "Effect of age on learning" -- Mimeo. 1261-44 -- Extension service, United States Department of Agriculture. Washington, D.C.

The extension agent can make adjustments in his methods to overcome these factors. For example: -

For less acute vision - be sure there is sufficient light; arrange the group so that those with poorer vision are close to the speaker or demonstrator; etc.

For less acute hearing - Speak clearly and more slowly; use well-chosen words and short sentences; use visual aids such as pictures, charts; prevent distracting noises.

For slower reaction time - Present topic step by step; present it in short, clear units; arrange these units in logical order; repeat often, etc.

For greater reluctance to learn and fear of failure - Develop their self-confidence and their confidence in the agent; commend them for their good ideas; use their experiences; make them physically comfortable.

VII. Retention of Learning -- Remembering and Forgetting

We forget most of what we have "learned" or partially learned within a few weeks after we have learned it. The farmers who learn from a good extension teacher will remember more than that. The agent uses a number of techniques to help people remember. Some of these are:

1. Be sure the people are deeply interested in what they are learning. This means that they must really want to learn and are ready to change.

2. Be sure they understand very clearly each element of the learning and the relation of each part to the whole.

3. Use words that are simple and familiar; use as few words as possible. Once spoken, they are gone forever.

4. Supplement talking with clear demonstrations and with illustrations out of the learner's experience; also use vivid images, interesting symbols, etc. It has been proved that people learn better and remember longer what they have seen than what they have heard.

5. If possible, have each person actually do the skill to be learned--several times. Watch each learner carefully and correct his mistakes at once. We learn errors as well as correct things.

6. Teach the information or the skill as near as possible to the time it can be used. Example: Teach insect control just in advance of the time the insects are expected to appear.

7. Be sure that each person uses the information or skill—to his own benefit. If it does not benefit him, help him understand why.

The essentials of remembering that which has been learned are Interest, Understanding and Use.

VIII. Summary -

Extension is a program of doing favorable things to people by working with people; it is not a program of doing things for people. It is a program of voluntary education the aim of which is continuous individual and social growth. Extension is teaching. It helps people to learn -- to help themselves. It has proven effective wherever it has been skillyfully applied. Because local extension agents are teachers, the first requirement is that they understand the nature and process of learning. Learning is the process by which an individual through his own activity becomes changed in his behaviour. Learning is that kind of activity by a person which causes him to be different afterward. The changes brought about through learning can be roughly classified as:

1. Additions or modifications in his knowledge;
2. Changes in the way he does things (skills and methods); and
3. Changes in his attitudes or ways of feeling.

Learning is an active process; each individual must actually participate in the process; he learns to do by doing the thing to be learned. Learning stems from the individual's interests and felt needs; these motivate or stimulate him to learn; learning is not complete until he has satisfied his interest or need. New learning is based on previous learning and experience. This Principle of Association is fundamental to all learning (and teaching). Each individual is the product of previous learnings, experiences, and of influences such as customs, fears and laws; the individual associates new interests and needs with this background. These background factors influence his "readiness" to learn and change. Previous learnings and experiences which were satisfying, stimulate the individual to new learning effort. Learning is an individual process; each person has to learn for himself. Interests and needs are highly personal; and so are the satisfactions which result from realizing these interests and needs. The previous learnings and experiences upon which new learning is built are also highly personal. Farm people may learn simultaneously in groups—but they learn and change as individuals. Skillful extension agents can teach individuals in groups. The agent will use many different techniques; he will also utilize certain human tendencies. The ability of people to learn and their rate or speed of learning declines only slightly as they grow older (ability to learn--1 percent or less per year after age 40; about 1 percent per year after 35). Reasons for the slight decline in rate of learning are poorer vision; poorer hearing, slower reaction time, greater reluctance to learn and increased fear of

failure. The extension agent can overcome these influences by planning and methods. People forget very quickly much of what they learn or partially learn unless they are deeply interested, clearly understand and then use the information or skill learned. There are many techniques available to the extension agent to insure better remembering of the things learned.